

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A circuit board comprising:
an insulating ceramic substrate having two surfaces; and
conductive layers bonded to both surfaces of the insulating ceramic substrate, wherein the conductive layers comprise at least 99.98% by mass of aluminum, and display an average crystal grain diameter within a range from 0.5 mm to 5 mm and a standard deviation σ of the crystal grain diameter less than or equal to ~~of no more than~~ 2 mm.

Claim 2 (currently amended): A circuit board according to claim 1, wherein the conductive layers comprise rolled materials comprising at least 20 ppm ~~or more~~ of each of Cu, Fe and Si.

Claim 3 (original): A circuit board according to claim 2, wherein the conductive layers are rolled with a draft of at least 15%.

Claim 4 (currently amended): A circuit board according to claim 1, wherein a surface area of a crystal with maximum crystal grain diameter within the conductive layers accounts for less than ~~or equal to~~ no more than 15% of a surface area of the insulating ceramic substrate.

Claim 5 (original): A circuit board according to claim 1, wherein the insulating ceramic substrate is formed from at least one of Al_2O_3 , AlN and Si_3N_4 .

Claim 6 (currently amended): A circuit board according to claim 1, wherein the conductive layers are bonded to the a surface of the insulating ceramic substrate using a brazing material, and the brazing material is one or more materials selected from a group consisting of Al-Si based materials, Al-Ge based materials, Al-Mn based materials, Al-Cu based materials, Al-Mg based

materials, Al-Si-Mg based materials, Al-Cu-Mn based materials, and Al-Cu-Mg-Mn based materials.

Claim 7 (currently amended): A circuit board according to claim 2, wherein a surface area of a crystal with maximum crystal grain diameter within the conductive layers accounts for no more than 15% of a surface area of the insulating ceramic substrate, the insulating ceramic substrate is formed from at least one of Al_2O_3 , AlN and Si_3N_4 , the conductive layers are bonded to the a surface of the insulating ceramic substrate using a brazing material, and the brazing material is one or more materials selected from a group consisting of Al-Si based materials, Al-Ge based materials, Al-Mn based materials, Al-Cu based materials, Al-Mg based materials, Al-Si-Mg based materials, Al-Cu-Mn based materials, and Al-Cu-Mg-Mn based materials.

Claim 8 (currently amended): A method of producing a circuit board, comprising the steps of:

positioning a conductive layer comprising at least 99.98% by mass of aluminum on top of an insulating ceramic substrate with a brazing material disposed therebetween,

bonding the conductive layer and the insulating ceramic substrate together via the brazing material by compressing the conductive layer and the insulating ceramic substrate at a pressure within a range from 50 kPa to 300 kPa while heating to a temperature of at least 600°C in one of either a vacuum and or an inert gas atmosphere, and

making an average crystal grain diameter of the conductive layer within a range from 0.5 mm to 5 mm, and

making a standard deviation σ of the crystal grain diameter no more than 2 mm.

Claim 9 (currently amended): A method of producing a circuit board according to claim 8, further comprising the step of a step for producing the conductive layer, comprising the steps of by heat treating a plate material comprising at least 99.98% by mass of aluminum and at least 20 ppm of each of Cu, Fe and Si, and then conducting rolling with a draft of at least 15%.

Claim 10 (original): A power module comprising a circuit board according to claim 1, and a heat radiating plate for supporting the circuit board.

Claim 11 (currently amended): A power module according to claim 10, wherein at least a portion of the conductive layer of the circuit board is bonded to the heat radiating plate using a circuit board brazing material with a lower melting point than the brazing material.